C-17 Flexible Sustainment

AF PEO/AT
3 Oct 02

Overview

- **What is Flexible Sustainment?**
- **The Contract**
- **Performance Measurement**
- **Flex Next**

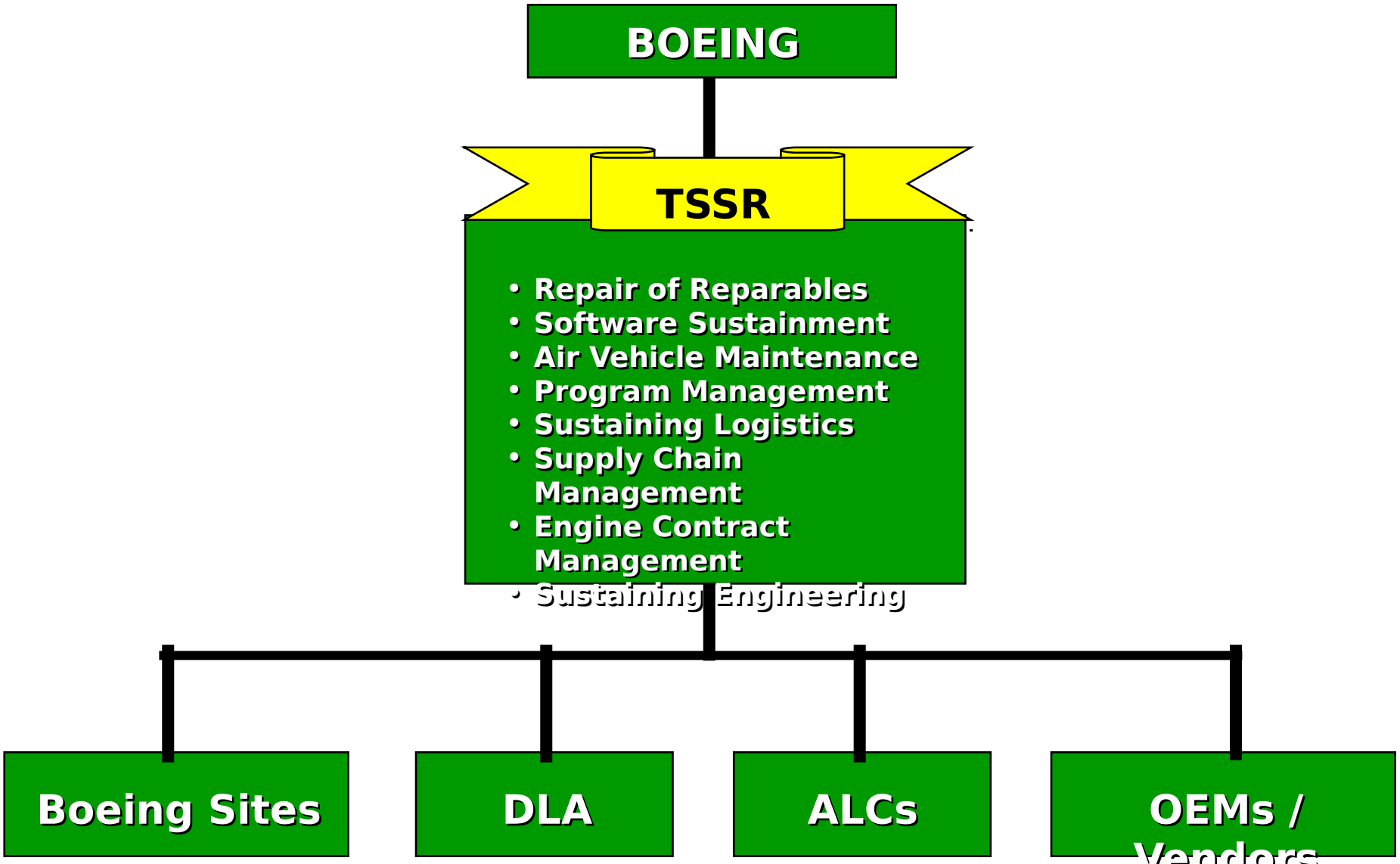
THE FLEXIBLE SUSTAINMENT CONCEPT

- **Overall support strategy for sustaining the C-17 fleet**
  - **Total System Support Concept**
  - **Create a commercial-like, performance-based support structure that maintains the desired configuration**
  - **Combination of Interim Contractor Support (ICS), Contractor Logistic Support (CLS) and Organic**
    - **“Core” depot maintenance reserved for organic depots**
    - **Engine is CLS**
    - **Remaining Flex ICS until FY06**
  - **Contractor has Total System Support Responsibility (TSSR) for integration**

Goal: Optimize Mission While Controlling Costs

TOTAL SYSTEM SUPPORT RESPONSIBILITY

PRIME CONTRACTOR: BOEING

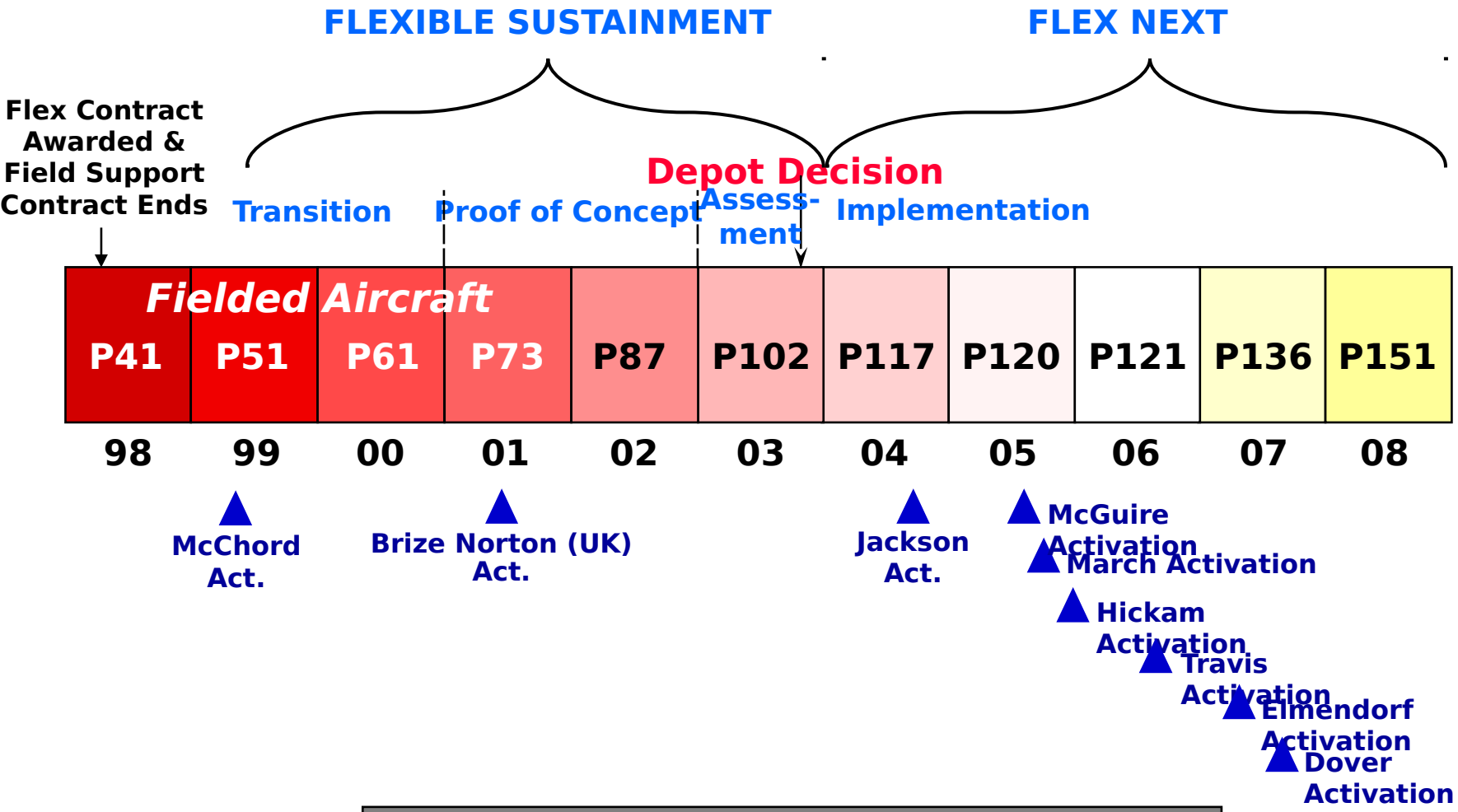


FLEXIBLE SUSTAINMENT CONTRACT

- **Major performance-based support contract with Boeing**
  - **8 year strategy to support fleet during 120 aircraft production**
    - ***FY98 - FY00*** **Transition from field support to Flex Concept**
    - ***FY01 - FY02*** **Proof of Concept**
    - ***FY03*** **Long term support assessment and decision**
    - ***FY04 – FY05*** **Implementation**
  - **Strategy adjustment due to additional 60 aircraft production approval**
    - ***July 2001*** **SAF/AQ, AF/IL and AFMC/CC assigned Boeing as long term TSSR**
    - ***FY04 – 08*** **Flex Next Contract with organic depot partnering**

- **Integrated engine and aircraft support**

C-17 FLEXIBLE SUSTAINMENT TIMELINE



Aircraft Production and Beddown

FLEXIBLE SUSTAINMENT CONTRACT

- **Performance Work Statement (PWS) covers eight areas**
  - **1.1 Program Management**
  - **1.2 Sustaining Logistics**
  - **1.3 Supply Support**
  - **1.4 Sustaining Engineering**
  - **1.5 Depot Maintenance**
  - **1.7 Engine Management Support**
  - **1.8 Long-Term Sustainment**

FLEXIBLE SUSTAINMENT CONTRACT CONTENT

- Program Management
  - Configuration Management
  - Surge/Contingency Support
- Sustaining Logistics
  - Mod Planning
  - TCTO Generation
  - Provisioning Data
- Spares Management (C-17 Unique Spares)
  - Spares Management
  - Repair of Reparables
- Sustaining Engineering
  - Deficiency Reports (DRs) / Material Improvement Projects(MIPs)
  - ACI Requirements
- Depot Level Aircraft Maintenance
  - ACI, Paint, Corrosion, Modification
  - Drop-in Maintenance
- Engine Maintenance
- Long Term Sustainment Planning

C-17 GOVERNMENT RETAINED SUPPORT

- Air Logistics Centers / Defense Logistics Agency
  - Manage common assets (used by multiple weapon systems)
  - Personnel Life Support
  - CAD/PAD and defensive aids
- Engine SPO
  - Procures installs and whole spare engines
- C-17 SS-IPT / System Support Manager (SSM)
  - Procure electro/mech support equipment
  - TOMA for technical orders
- WR-ALC
  - Print & distribute technical orders
  - Buy and build selected support equipment
- Trainer SPO
  - Procures Aircrew and Maintenance Training Devices
- ESC
  - Electronic warfare support
  - Mission planning support

FLEXIBLE SUSTAINMENT

Performance Work Statement

Defines performance-based effort to be performed by the contractor

CP/FFP Contract

- Defines contract terms and conditions the contractor must meet to satisfy the cost and performance measures and contract remedies if requirements are not met
- Accommodates use of mgmt indicators (e.g., Health of Fleet, System Executive Management Report)
- Motivates contractor performance

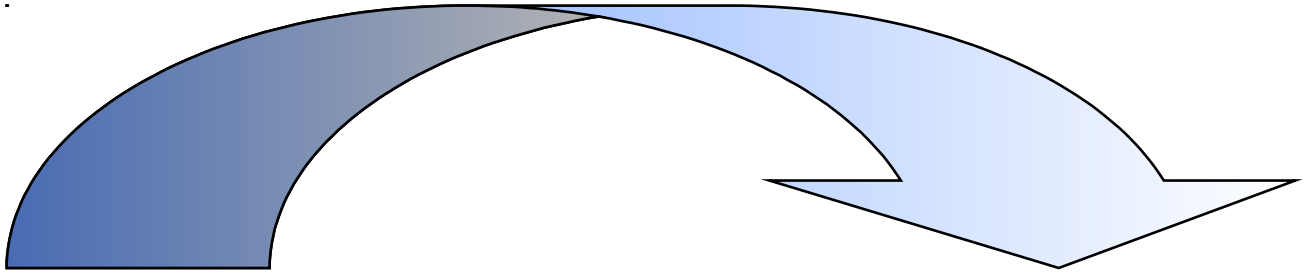
Performance Measurement Plan

Identifies measures and methodology to determine if CP/FFP performance measures were achieved

Award Fee Plan

Provides motivation to achieve higher levels of Aircraft Availability

FLEXIBLE SUSTAINMENT PERFORMANCE METRICS



PWS FY 98 - 00

C-17 PERFORMANCE WORK STATEMENT

1.1 PROGRAM MANAGEMENT	1.2 SUSTAINING LOGISTICS	1.3 SPARES MANAGEMENT	1.4 SUSTAINING ENGINEERING	1.5 AIR VEHICLE MAINTENANCE
•Configuration Mgmt Status • Skyhook Response	• TO Change Timeliness • TCTO Timeliness •Provisioning Data Delivery	•Non-transitioned Spares Proposals • Stockage Effectiveness •MICAP Delivery •Spt Levels for MRSP & IRSP • RFI Eng Level • ROR Services	•EDs for Fld Acft •EDs for NMCM Acft • DR/MIP Disposition	•Timely Completion of Air Vehicle Maintenance

FY 98 - 00 Performance Metrics

PWS FY 01 - 05

C-17 PERFORMANCE WORK STATEMENT

1.1 PROGRAM MANAGEMENT	1.2 SUSTAINING LOGISTICS	1.3 SPARES MANAGEMENT	1.4 SUSTAINING ENGINEERING	1.5 AIR VEHICLE MAINTENANCE

Fleet Availability

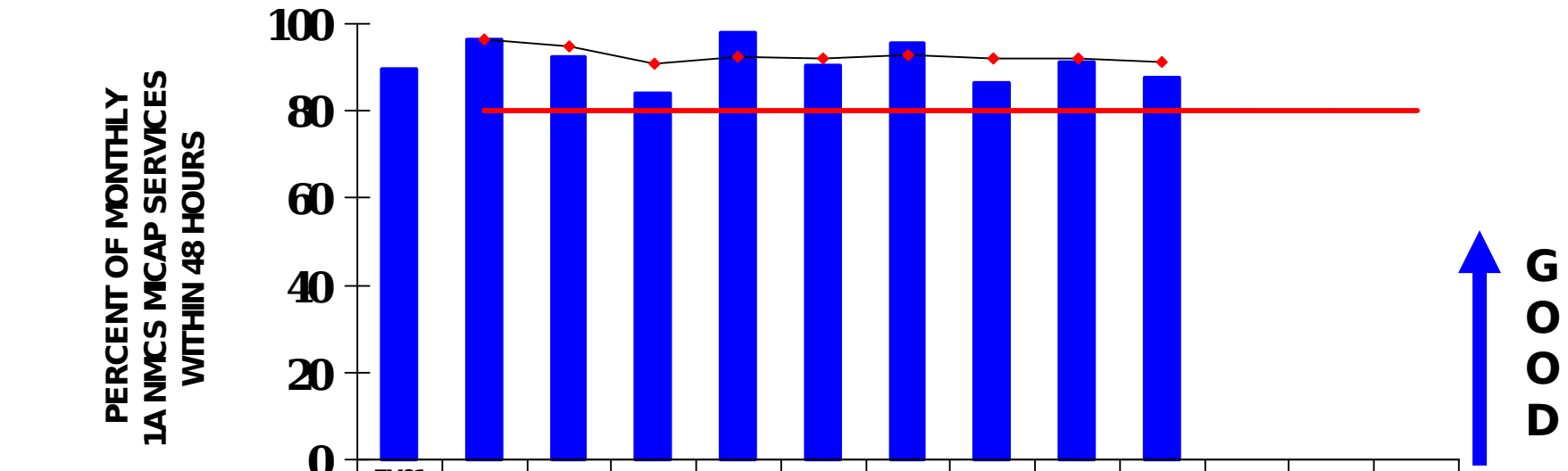
- Issue Eff.
- FSL Support
- FHA
- MICAP
- Depot Mnx Sched

FY 01-05 Performance Requirements

FLEXIBLE SUSTAINMENT METRICS (FY01-03)

- **Flexible Sustainment Aircraft Availability (FSAA)**
  - ***Health of the Fleet***
- **Depot Maintenance Scheduling Effectiveness**
  - ***Depot Level Maintenance***
- **Flying Hours Achievable (FHA)**
  - ***Wartime Preparedness***
- **FSL Replenishment Effectiveness**
  - ***Forward Operating Locations***
- **Issue Effectiveness**
  - ***Peacetime and Wartime Supply Support***
- **MICAP Service Effectiveness**
  - ***Critical Parts Shortages***

FLEX METRIC EXAMPLE:
USAF MICAP SERVICES FOR REQUEST WITH A UJC OF 1A (NMCS) IN 48 HOURS~FY02



	FY01 CUM	Oct-01	Nov-01	Dec-01	Jan-02	Feb-02	Mar-02	Apr-02	May-02	Jun-02	Jul-02	Aug-02	Sep-02
Monthly Actual	89.7	96.3	92.6	84.2	98.1	90.6	95.7	86.5	91.40	87.5			
FY02 Requirement	N/A	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
CUM YTD	N/A	96.3	94.8	91.0	92.4	92.1	93.0	91.9	91.90	91.3			
Total Month's Events	N/A	80	54	76	53	53	115	89	70	80			
Month's Successful Events	N/A	77	50	64	52	48	110	77	64	70			

FLEX MECHANICS PERFORMANCE ASSESSMENTS

- **Flex Contract is performance based and heavily linked to user support metrics**
  - **Most of contractor profit is linked to Award Fee provisions**
    - **Technical Performance (2 Objective) 70%**
    - **Cost Control (one Objective) 25%**
    - **Customer Satisfaction (FY 03) 5%**
  - **Results so far: Oct 00 – Oct 01 (latest full mea period)**

Flex Report Card

Excellent

Standard of Excellence: FSAA & Issue Effective Cost Performance (99.9)

FY01-03 VS FLEX NEXT

	FY01-03	FY04 & ON
CONTRACT TERM	3 years priced 2 years unpriced	5 years priced 3 years unpriced (?)
CONTRACTING APPROACH	FAR 15	FAR 15 modified
CONTRACT TYPE	FFP/AF CP/AF	FFP/AF
PARTNERING APPROACH	DSA for ACI's	DSPA
PERFORMANCE METRICS	3 for AF 5 others	(4 in FY03) 2 for AF 5 others
NO. OF AIRCRAFT	120	180
NO. OF OPERATING BASES	4	11

FY04 & ON FLEXIBLE PERFORMANCE METRICS

System level metrics plus minimum performance requirements

FFP Award Fee

- **Flex Sustainment Aircraft Availability *(Health of the Fleet)***
- **Customer Satisfaction**

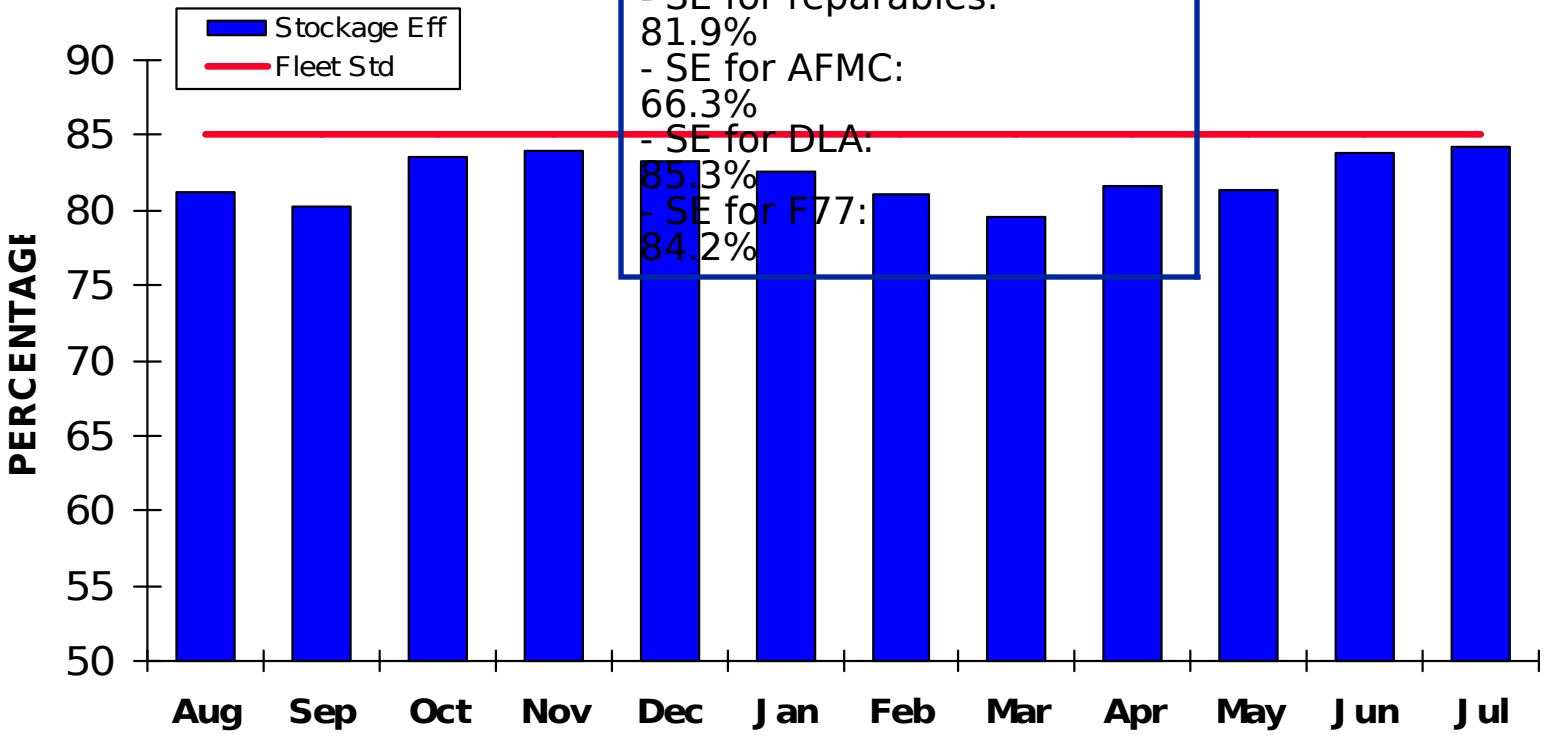
FFP Performance Requirements

- **Flying Hours Achievable *(Wartime Preparedness)***
- **MICAP Effectiveness *(Critical Part Shortages)***
- **Depot Maintenance Scheduling *(Depot Level Maintenance)***
- **Quantity of RFI Engines *(Engine Availability)***
- **Issue Effectiveness *(Availability of Spares)***
  - **XD items**
  - **Consumables (all others)**

BACK UP SLIDES

FLEET STOCKAGE EFFECTIVENESS

STATUS:
- SE for consumables: 85.1%
- SE for reparables: 81.9%
- SE for AFMC: 66.3%
- SE for DLA: 85.3%
- SE for F77: 84.2%

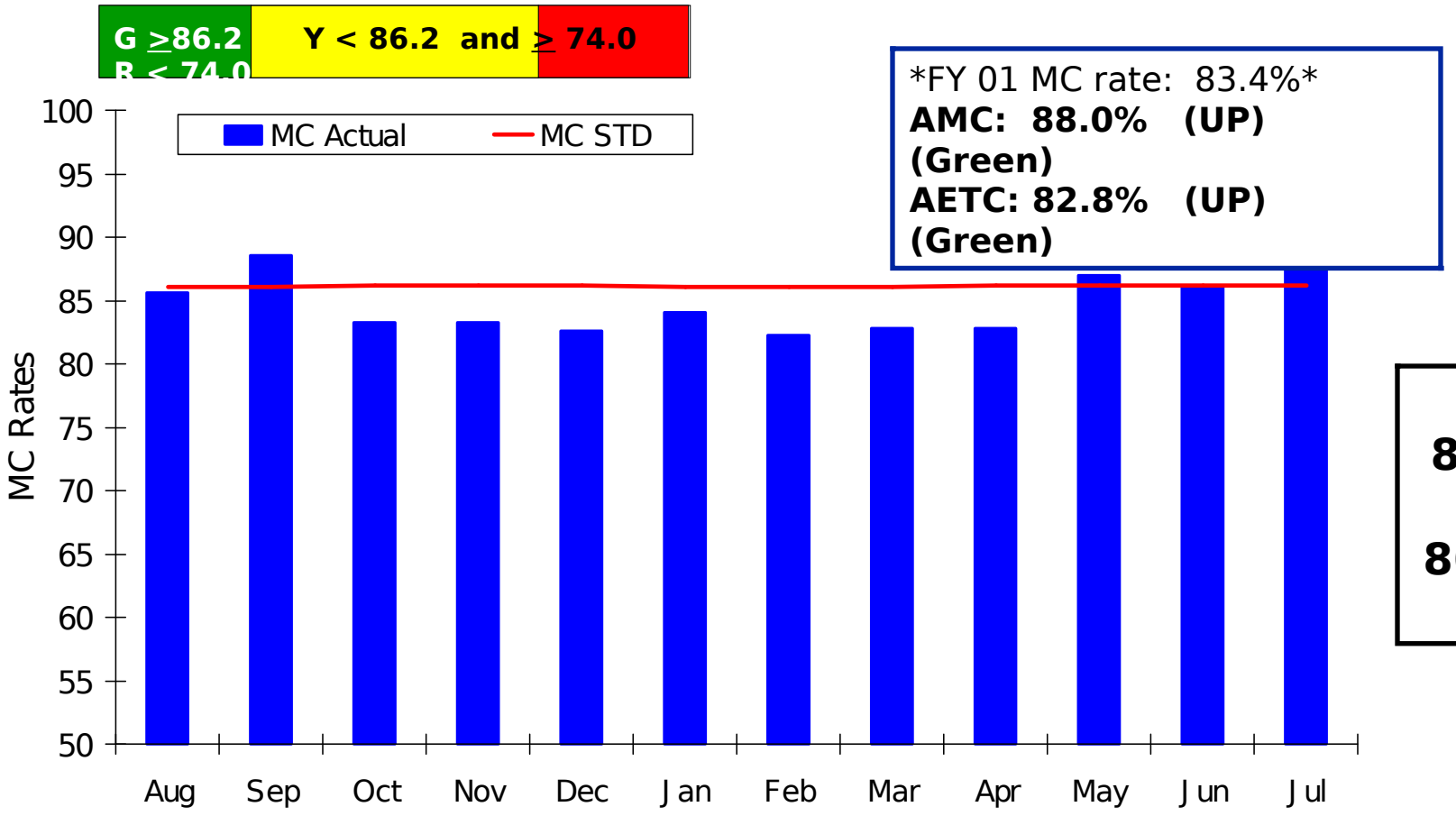


July
84.2 % vs 85.0 % Std

GOOD

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Stockage Eff	81.2	80.2	83.6	84.0	83.3	82.6	81.0	79.6	81.6	81.3	83.8	84.2
Fleet Std	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0

FLEET MISSION CAPABLE RATE



FY 01 MC rate: 83.4%
AMC: 88.0% (UP) (Green)
AETC: 82.8% (UP) (Green)

July
87.4%
vs
86.2%
Std

GOOD

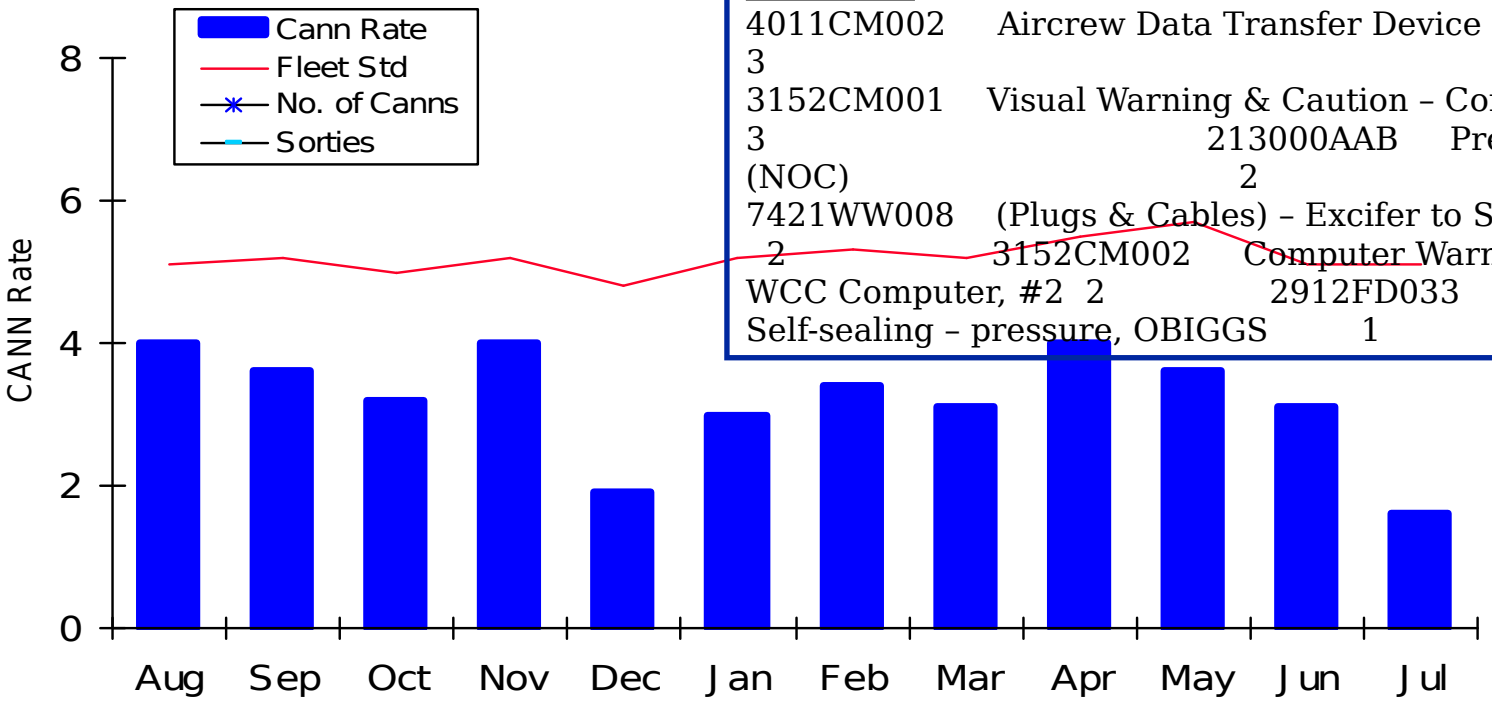
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
MC Actual	85.6	88.5	83.3	83.3	82.6	84.0	82.3	82.8	82.8	87.0	86.2	87.4
MC STD	86.1	86.1	86.2	86.2	86.2	86.1	86.1	86.1	86.2	86.2	86.2	86.2

FLEET CANNIBALIZATIONS

G<=5.1 > 5.1 and <=12.0 >12.0

FLEET Cannibalization Drivers:

Ref Des	Noun	# Incidents
4011CM002	Aircrew Data Transfer Device (ADTD	3
3152CM001	Visual Warning & Caution – Computer, CAWS	3
213000AAB	Pressurization Control (NOC)	2
7421WW008	(Plugs & Cables) – Excifer to Spark Igniter, Sys A	2
3152CM002	Computer Warning & Caution – WCC Computer, #2	2
2912FD033	Coupling Half, Self-sealing – pressure, OBIGGS	1

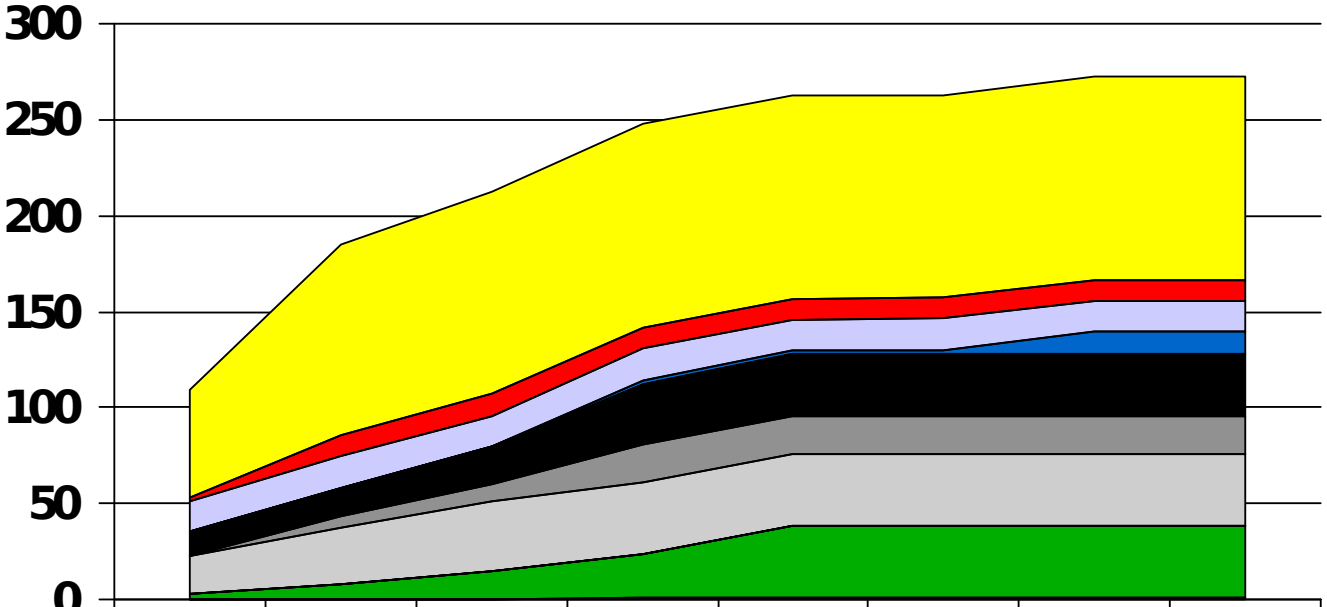


July
1.6%
vs
5.1%
Std

GOOD

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Cann Rate	4.0	3.6	3.2	4.0	1.9	3.0	3.4	3.1	4.0	3.6	3.1	1.6
Fleet Std	5.1	5.2	5.0	5.2	4.8	5.2	5.3	5.2	5.5	5.7	5.1	5.1
No. of Canns	78	58	71	64	36	48	44	58	70	61	62	37
Sorties	1974	1474	2203	1591	1789	1610	1313	1870	1756	1672	1980	2246

MEETING FY03 CORE WORKLOAD



	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10
Airframe (U)	56.7	99.3	106.0	106.0	106.0	106.0	106.0	106.0
Engine Related (V)	1.4	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Landing Gear (Q)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Electrical Components (C)	0.3	0.3	0.4	1.9	2.1	2.3	11.5	11.5
Instruments (T)	12.2	14.7	19.5	32.0	32.0	32.0	32.0	32.0
Airborne Electronics (F)	0	5.9	8.4	20.0	20.0	20.0	20.0	20.0
Software	20.0	30.0	37.0	37.0	37.0	37.0	37.0	37.0
Electronic Spt Equip't (D)	0	0	0	0	0	0	0	0
Hydraulic/Pneudraulic (J)	2.8	7.4	14.5	22.9	38.0	38.0	38.0	38.0
Oxygen Components (K)	0	0	0	0.6	0.7	0.8	0.8	0.8

YEAR FY03 CORE HOURS ACHIEVED

- NOTE: Year Core achieved assumed no funding constraints; as of Jul 02

FLEX MECHANICS
SUPPLY SUPPORT STRATEGY

- Boeing is the Contractor Integrated Materiel Manager (CIMM)
  - Responsible for Supply Chain Management
  - Total Asset Visibility (TAV)
    - Covers parts on the shelf, on order, or in repair
    - Combination of contractor and AF systems to track assets
- Boeing is also Inventory Control Point (ICP) for peculiar spares
  - Maintains provisioning data
  - Catalogs items in the Federal Cataloging System
  - Controls peculiar inventory in central warehouse
  - Computes asset requirements
  - Determines asset allocation
  - Manages Repair of Reparables program
  - Trigger Based Item Management
  - Includes Readiness Spares Packages after USAF validates and fund requirements

FLEX MECHANICS
SUPPLY SUPPORT STRATEGY
(CONTINUED)

- **Boeing is the Item Equipment Manager (IEM) for peculiar support equipment**
  - **Buys some of it**
  - **Tracks, manages and warehouses all of it**
  - **Requisitioned by USAF as needed**
- **Final disposition of assets is USAF function**
- **USAF owns all spares and equipment**

FLEX MECHANICS FIELD SUPPORT

- **Robust field support teams at each Main Operating Base (MOB)**
  - **Decentralized engineering expertise**
  - **Responsible for trouble shooting, problem resolution, customer inquiries**
- **Recovery and Modification Services (RAMS / Boeing)**
  - **Provide on-site Depot Maintenance capability (TCTO's / Warranty Work/ Engineering Dispositions)**
  - **Support necessary beyond capability of wing**
- **Supply support personnel on-site expedite repair and asset flow**
- **Engine support engineer at each MOB to gather trend data and diagnostics**
- **Field support concept being restructured as MOBs expand**

FLEX MECHANICS
C-17 PROPULSION SYSTEM MAINTENANCE

- Propulsion support contracted through Boeing
- Comprises about 30% of contract cost
- Required program level tracking
  - Average time on wing
  - Base stock levels
  - Fully built-up serviceable engines
  - Engines Not Mission Capable Supply (ENMCS)
- Estimating engine use based on cycles

FLEX MECHANICS
C-17 MAINTENANCE SUPPORT

- **Wing Level Maintenance (USAF & UK)**
  - **On (organizational) & some off (Intermediate) aircraft maintenance done at the bases by user maintainers**
- **Depot Level Maintenance done by Boeing**
  - **Scheduled “Heavy” Maintenance**
    - **Analytical Condition Inspections (ACI) / Paint / MOD’s done at Boeing Aerospace Support Center (BASC), San Antonio, TX.**
    - **Some ACI work also performed at WR-ALC, Ga. (Boeing partner)**
    - **Long Beach Mod Center used on contingency basis (e.g., Speedline work)**
  - **Unscheduled “Heavy” Maintenance**
    - **Major Safety TCTO’s/ A/C Drop-in’s (Mishap Repairs etc.) currently done at BASC & Long Beach Mod Center ; WR-ALC eventually**
- **CLSS / Contractor recovery teams deployed worldwide as needed**